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| 10/540,499 | 04/17/2006 | Matti Ravaska | 18901 | 4209 |

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| EXAMINER |
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CALANDRA, ANTHONY J

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| ART UNIT | PAPER NUMBER |
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1741

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01/19/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/540,499

Applicant(s)

RAVASKA, MATTI

Examiner

ANTHONY J. CALANDRA

Art Unit

1741

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-17 and 20-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-10, 13-17, 20-24 is/are rejected.
- 7) ☒ Claim(s) 11 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-840)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Detailed Office Action

The communication dated 10/22/2010 has been entered and fully considered.

Claims 1, 3-17, and 20-24 are currently pending. Claims 11 and 12 are objected to as allowed based upon a rejected independent claim. Claims 2, 18, and 19 have been canceled by the applicant. Claims 22-24 are new. Claims 1, 3, 11, 12, 14-17, and 20 have been amended by the applicant.

Allowable Subject Matter

1. Claims 11 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of primary reasons for the indication of allowable subject matter:

The prior art does not teach fatty acids of claim 1 at the proportions claimed by the applicant in either claims 11 or 12 mixed with hardwood particle. Further the distilled tall oils of the prior art failed to comprise the fatty acids at these proportions. More specifically, claim 11 requires at least 28% oleic acids and at least 7% stearic acids. In contrast the prior art only suggests that distilled tall oil has 26.2 oleic acids and 1.4% stearic acids. In claim 11, a minimum of 33% oleic acids are required and 13% stearic acids are required. Neither does the prior art suggest mixing monomer acids with distilled tall oil to obtain the desired ranges. Further, the prior art fails to disclose whether the stearic and oleic acids are branched and/or linear.

Response to Arguments

Applicant argues that in the DUNLAP reference the SYLVATAL 40DD is diluted to a 20% solution by the method of FARLEY. The applicant then states that because of this dilution ranges do not meet the instant claimed range.

In instant claim 1 the applicant is claiming a composition in a digester comprising both hardwood particles and a wood cooking aid. Cooking liquor is also present as understood by the comprising language. The percentages given in the claim only describe the composition prior to the final product claim. The Sylvatal 40DD meets the claim limitations for the composition prior to use. The fact that it is later diluted does not affect the final claim language. Again the applicant is only claiming a final composition comprising the wood and wood cooking aid. The claim language gives no hint to the relative percentages of wood, cooking aid, or cooking liquor.

Instant claims 17 and 20 are method claims. The claims do not exclude diluting the wood cooking aid prior to use. Further, instant claim 20 even suggests that the cooking aid is diluted prior to use because the cooking liquor comprises the cooking aid. Looking to the old claim set 7/30/2009, claim 17, it is clear that the fatty acid/rosin acid mixture is diluted (reacting said fatty acid rosin mixture with water and sodium hydroxide). Finally, looking at examples 1-6 each add water to the solution in the applicant's own specification. In example 1 the dilution is ~33% {64.3 g fatty acid rosin mixture / 127.2 g water + 64.3 grams fatty acid rosin mixture}. Therefore the applicant's argument is untenable in light of the specification.

Applicant argues that even without dilution Sylvatal 40 DD rosin acid range of 26-32% (and usually 28%) is outside of the 35 to 80% range for rosin acids recited in claim 3.

The examiner would agreed that is outside of the range of 35-80% if the wording 'about' was not used in the claim language. Given the word 'about' it is reasonable to conclude that the rosin acid content falls within the claimed range. The broader independent claim range (claim 1) is about 20% to about 98%. A reasonable interpretation of 'about' for the broader/narrow range is up to the midpoint between the two, or 27.5%. Therefore about 20% would include up to 27.5% and about 35% would include down to 27.5%.

The applicant argues that the treatment of birch is not obvious in light of DUNLAP. The applicant argues that it would not be obvious to substitute birch wood for the aspen of DUNLAP.

Respectfully, the examiner's argument is different then presented by the applicant. The applicant states the examiners argument is substituting birch for aspen. The examiner has instead argued that it would be obvious to use distilled tall oil as an additive for birch cooking which is known. The examiner does not suggest that a person of ordinary skill in the art would substitute birch for aspen. Both aspen and birch are similar in that they are hardwoods and have similar lignin, cellulose, and hemicellulose compositions. More importantly DUNLAPP recognizes that both birch and aspen are both high in extractives and have similar pitch problems [pg. 366 paragraph 2]. Under KSR similar problems it is obvious to apply a known process to improve distilled tall oil treatment to the cooking process of birch ready for improvement. Applying a known technique to a known method ready for improvement to yield predictable results is typically prima facie obvious.

Applicant argues that one distilled tall oil being good for one wood type over crude tall oil is not a strong basis for determining it would be obvious to for another type of wood.

The examiner argues that using distilled tall oil over crude for birch wood given the teachings regarding aspen wood. DUNLAPP clearly shows that both birch and aspen have high extractives content and similar pitch problems. DUNLAP states that one factor which gives distilled tall oil an advantage over crude tall oil is DTO's high ratio of saponifiables to unsaponifiables [pg. 373 paragraph 3 and pg. 376 paragraph 1]

The examiner notes in contrast to the examiners obviousness rejection in view of DUNLAPP the applicant's independent claims and specification claim the whole genus of hardwoods with distilled tall oil while only giving examples for birch wood. Further, the applicant doesn't even show any examples in the specification that distilled tall oil is better than any crude tall oil.

DUNLAPP in view of MAGEE

Applicant makes a similar argument regarding the 20% dilution for DUNLAPP in view of MAGEE as per above. Applicant additionally makes similar arguments in regards to birch wood.

The examiner again agrees that the 20% dilution occurs in DUNLAPP but disagrees that that this precludes anticipation or obviousness as per arguments supra. Please see supra for the examiners comments regarding birch wood.

The applicant argues that distilled tall oils vary greatly and it would not be obvious to substitute one for another in DUNLAP.

DUNLAP states that one possible factor which gives distilled tall oil an advantage over crude tall oil is DTO's high ratio of saponifiables to unsaponifiables [pg. 366 paragraph 3 and pg. 373 paragraph 3]. Each of the distilled tall oils of DUNLAP show a very high ratio of saponifiables as compared to unsaponifiables and would therefore be useful. Further, the examiner notes as discussed below, the composition of each and every one of the American distilled tall oils meet the instantly claimed language.

Applicant argues that the MAGEE lists the compositions in terms of acids and neutrals. The applicant argues that neutrals and unsaponifiables are different.

MAGEE gives the % acids in the composition in table 1 and gives neutrals. The % unsaponifiables are not greater than 100% - % acids, whether neutrals are considered as unsaponifiables or not. In each case the maximum amount of unsaponifiables is less than about 15%.

| Sample number | % Acids | % Max Unsaponifiables 100 - % Acids < about 15% Unsaponifiables |
|------------------|---------|---|
| Claim limitation | | |
| A | 97.5 | 2.5 |
| B | 97 | 3 |
| C | 96.2 | 3.8 |
| D | 86.9 | 13.1 |
| E | 96.4 | 3.6 |
| F | 96.1 | 3.9 |
| G | 94.8 | 5.2 |
| H | 93.4 | 6.6 |
| HI | 92.1 | 7.9 |
| Hxs | 95.9 | 4.1 |
| I | 96 | 4 |
| II | 95.3 | 4.7 |
| IXS | 98.1 | 1.9 |

The applicant argues that the examiner uses the small sampling to generalize as to specific components of distilled tall oil in general.

The MAGEE reference states that the different compositions were taken from a cross section of distilled tall oil produced in the United States [abstract]. The paper in fact states that the purpose of the paper is to characterize American distilled Tall oils [pg. 321 column 1].

The applicant argues that there is picking a choosing between each of the distilled tall oils disclosed by MAGEE.

The examiner need not pick and choose. In table 1/2 each and every one of the examples fall within the claimed ranges of “about 70 to about 2% fatty acids, about 20 to about 98% rosin acids, and less than about 15% unsaponifiable material for independent claims 1, 17 and 20.

Table 1 of MAGEE gives the fatty acids and rosin acids as percentages of acids. The percentage as part of the composition is simply % acids multiplied by the percent of fatty or rosin acids.

The examiner has included a table below based on table 1 of the MAGEE reference.

| Sample # Claim limitation | % Acids | % Max Unsaponifiables 100 - % Acids <15% Unsaponifiables | % Fatty acids | % Adjusted fatty acids about 70 to about 2% | % Rosin Acids | % Adjusted Rosin acids about 20 to about 98% |
|----------------------------------|---------|--|---------------|--|---------------|---|
| A | 97.5 | 2.5 | 63 | 61 | 37 | 36 |
| B | 97 | 3 | 60 | 58 | 40 | 39 |
| C | 96.2 | 3.8 | 65 | 63 | 35 | 34 |
| D | 86.9 | 13.1 | 60 | 52 | 40 | 35 |
| E | 96.4 | 3.6 | 68 | 66 | 32 | 31 |
| F | 96.1 | 3.9 | 53 | 51 | 47 | 45 |
| G | 94.8 | 5.2 | 23 | 22 | 77 | 73 |
| H | 93.4 | 6.6 | 47 | 44 | 53 | 50 |
| HI | 92.1 | 7.9 | 55 | 51 | 45 | 41 |
| Hxs | 95.9 | 4.1 | 29 | 28 | 67 | 64 |
| I | 96 | 4 | 45 | 43 | 55 | 53 |
| II | 95.3 | 4.7 | 62 | 59 | 38 | 36 |
| Ixs | 98.1 | 1.9 | 17 | 17 | 83 | 81 |

In the narrower claims 3 and 24 the claimed ranges are about 55% to about 15% fatty acids, about 35 to about 80% fatty acids and less than about 15% unsaponifiables. Of the 13 samples 7 samples fall within the definite numerical bounds of the claim for each of the claim limitations. In samples A, B, C, E, and II the fatty acid percentage is 61, 58, 63, 66, and 59%, respectively, which can be argued to fall within the limits of term language of about 55% given a reasonably broad interpretation of 'about'. In sample Ixs the rosin acid percentage is 81 percent which can be argued to fall within the limits of the term of term language of about 80% given a reasonably broad interpretation of 'about'. The examiner finally notes that differences in concentration will not support non-obviousness absent evidence of criticality.

The applicant argues that there is no guarantee that the distilled tall oils comprise the positions of the double bonds in the distilled tall oils.

The examiner agrees that crude tall oils have different compositions however, the C20:2 and C20:3 fatty acids are common to tall oils. The American crude tall oils of MAGEE are distilled in similar ways and are shown to have C20:2 and C20:3 fatty acids. The Pine Chemical Association reference (PCA) shows that in C20:3 in fact has the double bonds in the position described by the applicant 5, 11, 14 -eicosatrenoic acid. The PCA document as does the MAGEE document discloses C20:2 fatty acids. The All-cis 5,11,14-20:3 Acid Podocarpic Acid or Sciadonic Acid document states that 5,11,14-20:3 occurs in pine tall oil extracts [column 1 paragraph 1]. The 11,14-20:2 fatty acid is said to occur with 5,11,14-20:3 fatty acid [column 2 paragraph 2]. Finally, Biodegradation of Lipids by Wood Sapstaining Ophiostoma Spp.

reference states that 11,14-20:2 and 5,11,14-20:3 are common fatty acids found in wood [pg. 17 Table 1].

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3-10, 13-17, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by *The Effects of Certain Chemical Additives on the Deresination of Trembling Aspen in Kraft Pulping* by DUNLAP-JONES et al. as evidenced by Applicant Admitted Prior Art of SYLVATAL 40 DD.

As for claims 1, 3, 6, 13, 14, 16, 17, 20, and 24, DUNLAP discloses pulping a hardwood with the addition of tall oil to aspen, a hardwood [abstract, pg. 365 Introduction]. DUNLAP discloses that distilled tall oil works the best for removing extractives [pg.374 Figure 1, pg. 377 Table 3, pg. 383 summary (3)]. DUNLAP discloses that SYLVATAL 40 DD double distilled is used. SYLVATAL 40 DD has typically 28% rosin acids, 2.1% unsaponifiables, and 69.9% fatty acids which falls within the instant claimed range.

In addition to the above as for claims 3 and 24, DUNLAPP discloses Sylvatal 40 DD which typically has a rosin acid amount of 28%. Given the word 'about' it is reasonable to conclude that the rosin acid content falls within the claimed range. The broader independent claim range (claim 1) is about 20% to about 98%. A reasonable interpretation of 'about' for the

broader/narrow range is up to the midpoint between the two, or 27.5%. Therefore about 20% would include up to 27.5% and about 35% would include down to 27.5%.

In addition to the above as for claim 20, DUNLAP discloses cooking at 170 degrees C [pg. 269 pulp preparation].

As for claims 4, 5, 7, 8, 9, 10, and 15, as the product is a distilled tall oil it will have the rosin and fatty acids of the instant claim absent evidence to the contrary. Again as the applicant Arizona Chemical now makes the SYLVATAL products it is in the best position to show otherwise and rebut the prima facie case.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claim 21-23 is rejected under 35 U.S.C. 103(a) as obvious over The Effects of Certain Chemical Additives on the Deresination of Trembling Aspen in Kraft Pulping by DUNLAP-JONES et al., hereinafter DUNLAP, as evidenced by Applicant Admitted Prior Art of SYLVATAL 40 DD.

As for claims 21-23, DUNLAP discloses treating aspen a hardwood with distilled tall oil. DUNLAP additionally discloses that birch wood has been treated with crude tall oil [pg. 367 paragraph 2]. At the time of the invention it would have been obvious at the time of the invention to apply a distilled tall oil treatment to birch wood instead of aspen wood. Both birch wood and aspen wood are hardwoods and therefore have similar fibers are similar in that they have similar lignin, cellulose, and hemicellulose compositions. More importantly DUNLAP recognizes that both birch and aspen are both high in extractives and have similar pitch problems [pg. 366 paragraph 2]. Additionally, the reference suggests the use of crude tall oil in birch treatments. As distilled tall oil has been shown to be superior [pg. 374 Figure 1, pg. 377 Table 3, pg. 383 summary (3)] it would have been obvious at the time of the invention to apply known distilled tall oil treatment to the cooking process of birch ready for improvement. Applying a known technique to a known method ready for improvement to yield predictable results is typically prima facie obvious.

4. Claims 1, 3-10, 13-17, and 20-24 are rejected under 35 U.S.C. 103(a) as obvious over The Effects of Certain Chemical Additives on the Deresination of Trembling Aspen in Kraft Pulping by DUNLAP-JONES et al., hereinafter DUNLAP, in view of Composition of American Distilled Tall Oils by MAGEE et al, henceforth referred to as MAGEE.

As for claims 1, 17, and 20, DUNLAP discloses pulping a hardwood with the addition of tall oil to aspen, a hardwood [abstract, pg. 365 Introduction]. DUNLAP discloses that distilled tall oil works the best for removing extractives [pg.374 Figure 1, pg. 377 Table 3, pg. 383 summary (3)]. DUNLAP does not explicitly disclose the components of the distilled tall oil. The examiner above has used what appears to be the composition of the distilled tall oil for the 102 rejection. However, should the composition of the distilled tall oil be shown not to meet the instant claim then in the alternate, MAGEE et al. teaches a distilled tall oil which is a mixture of fatty acids and resin acids (resin acids are rosin acids) and which have less than 15% unsaponifiables (A wood cooking aid comprising a fatty acid component and a rosin acid component and/or salts thereof wherein said fatty acid component is blended together with said rosin acid component to produce said cooking aid, and wherein said cooking aid comprises about 70 to about 2% fatty acids, and about 20 to about 98% rosin acids [see e.g. Table 1 Tall oil sample Hxs has 29% fatty acids, 67% Resin acids and 4.1% max unsaponifiables]). The mixture of fatty acids and rosin acids falls within the instant claimed range. Each of the various samples A-I have resin acid amounts which fall within the instant claimed range and fatty acids amounts which fall within the instant claimed range.

| Sample # | % Acids | % Max Unsaponifiables 100 - % Acids <15% Unsaponifiables | % Fatty acids | % Adjusted fatty acids about 70 to about 2% | % Rosin Acids | % Adjusted Rosin acids about 20 to about 98% |
|------------------|---------|--|---------------|--|---------------|---|
| Claim limitation | | | | | | |
| A | 97.5 | 2.5 | 63 | 61 | 37 | 36 |
| B | 97 | 3 | 60 | 58 | 40 | 39 |
| C | 96.2 | 3.8 | 65 | 63 | 35 | 34 |
| D | 86.9 | 13.1 | 60 | 52 | 40 | 35 |
| E | 96.4 | 3.6 | 68 | 66 | 32 | 31 |
| F | 96.1 | 3.9 | 53 | 51 | 47 | 45 |
| G | 94.8 | 5.2 | 23 | 22 | 77 | 73 |
| H | 93.4 | 6.6 | 47 | 44 | 53 | 50 |

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| | | | | | | |
|-----|------|-----|----|----|----|----|
| HI | 92.1 | 7.9 | 55 | 51 | 45 | 41 |
| Hxs | 95.9 | 4.1 | 29 | 28 | 67 | 64 |
| I | 96 | 4 | 45 | 43 | 55 | 53 |
| II | 95.3 | 4.7 | 62 | 59 | 38 | 36 |
| Ixs | 98.1 | 1.9 | 17 | 17 | 83 | 81 |

At the time of the invention it would have been obvious to the person of ordinary skill in the art to use any one of the distilled tall oil compositions of MAGIE in the process of DUNLAP. It is prima facie obvious to substitute one known distilled tall oil for another known distilled tall oil absent evidenced of unexpected results. DUNLAP states that one possible factor which gives distilled tall oil an advantage over crude tall oil is DTO's high ratio of saponifiabiles to unsaponifiabiles [pg. 366 paragraph 3 and pg. 373 paragraph 3]. Each of the distilled tall oils of DUNLAP show a very high ratio of saponifiabiles as compared to unsaponifiabiles and would therefore be useful. The person of ordinary skill in the art would expect each distilled tall oil to improve extraction from the wood treated as disclosed by DUNLAP. The use of the distilled tall oil of MAGIE in the process of DUNLAP would form the composition of the instant claims. The method of cooking disclosed by DUNLAP meets the instant claimed methods.

In addition to the above as for claim 20, DUNLAP discloses cooking at 170 degrees C [pg. 269 pulp preparation].

As for claim 3 and 24, tall oil sample Hxs of MAGEE et al. teaches 29% fatty acids, 67% Resin acids which falls within the instant claimed range [see table supra based on table 1 of MAGEE]. Each of the other distilled tall oils reasonably fall within the instant claimed range also.

In the narrower claims 3 and 24 the claimed ranges are about 55% to about 15% fatty acids, about 35 to about 80% resin acids and less than about 15% unsaponifiabiles. Of the 13

samples of MAGEE, 7 samples fall within the definite numerical bounds of the claim for each of the claim limitations. In samples A, B, C, E, and II the fatty acid percentage is 61, 58, 63, 66, and 59%, respectively, which can be argued to fall within the limits of term language of about 55% given a reasonably broad interpretation of 'about'. In sample Ixs the rosin acid percentage is 81 percent which can be argued to fall within the limits of the term of term language of about 80% given a reasonably broad interpretation of 'about'. The examiner finally notes that differences in concentration will not support non-obviousness absent evidence of criticality.

Further it is prima facie obvious to optimize concentration absent evidence of unexpected results.

As for claim 4, the tall oil sample Hxs of MAGEE et al. has resin acids including oil rosin acids, including abietic acid, dehydroabietic acid and palustrie acid [see e.g. table 3 sample Hxs].

As for claim 5, the tall oil sample Hxs of MAGEE et al. has pimaric acid and 8-15-pimaradienioc acid [see e.g. table 3 sample Hxs]. Examiner has interpreted 8-15-pimaradienioc acid to be equivalent to 8-15 pimaric acid.

As for claim 6, the fatty acids of MAGEE et al. are produced from tall oil [see e.g. abstract and 1st paragraph]. Tall oil is produced from trees which are vegetable matter.

As for claim 7, MAGEE et al. teaches that the tall oils contain oleic acid which is an unsaturated fatty acid [see e.g. Table 2].

As for claims 8 and 10, MAGEE et al. teaches that the tall oils contain oleic acid, linoleic acid and 18:3 fatty acid [see e.g. Table 2, 18:3 fatty acid is pinoleic acid]. Oleic acid is one of the acids that can be formed as a monomer part from the dimerization process.

As for claim 9, MAGEE et al. discloses, a conjugated fatty acid 18:2 (9,11 ct), and a cyclic fatty acid, pimaric acid [see e.g. Table 2, since the double bonds of the 18:2 fatty acid alternate carbons, it is a conjugated fatty acid].

As for claims 13 and 14, MAGEE et al. discloses multiple mixtures of distilled tall oils which contain fractions of fatty acids and rosin acids [see e.g. Abstract and 1st paragraph].

As for claim 15, MAGEE et al. discloses fatty acids with two unsaturated bonds and three unsaturated bonds and 20 carbon atoms [see e.g. Table 3 C20:2 and C20:3]. MAGEE et al. does not explicitly disclose the location of the unsaturated bonds on the 20 carbon chain fatty acids. Since the fatty acids taught by MAGEE et al. are produced in tall oil as are the fatty acids the instant application it is the examiners position that the C20 fatty acids of MAGEE et al. would include at least some fatty acids with the bond location of 5,11,14-C20-3 and 11,14-C20:2. Please see MPEP 2112.01.

As for claim 16, MAGEE et al. discloses tall oil fatty acids, tall oil rosin, and other distillation cuts [see e.g. Abstract and 1st paragraph].

As for claim 21-23, DUNLAP discloses treating aspen a hardwood with distilled tall oil. DUNLAP additionally discloses that birch wood has been treated with crude tall oil [pg. 367 paragraph 2]. At the time of the invention it would have been obvious at the time of the invention to apply a distilled tall oil treatment to birch would instead of aspen wood. Both birch

wood and aspen wood are hardwoods and therefore have similar fibers which are similar in that they are hardwoods and have similar lignin, cellulose, and hemicellulose compositions. More importantly DUNLAPP recognizes that both birch and aspen are both high in extractives and have similar pitch problems [pg. 366 paragraph 2]. Additionally, the reference suggests the use of crude tall oil in birch treatments. As distilled tall oil has been shown to be superior it would have been obvious at the time of the invention to apply known distilled tall oil treatment to the cooking process of birch ready for improvement. Applying a known technique to a known method ready for improvement to yield predictable results is typically prima facie obvious.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY J. CALANDRA whose telephone number is (571)

270-5124. The examiner can normally be reached on Monday through Thursday, 7:30 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Daniels can be reached on (571) 272-2450. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anthony J Calandra/
Examiner, Art Unit 1741

/Matthew J. Daniels/
Supervisory Patent Examiner, Art Unit 1741